

OCTOBER, 1917

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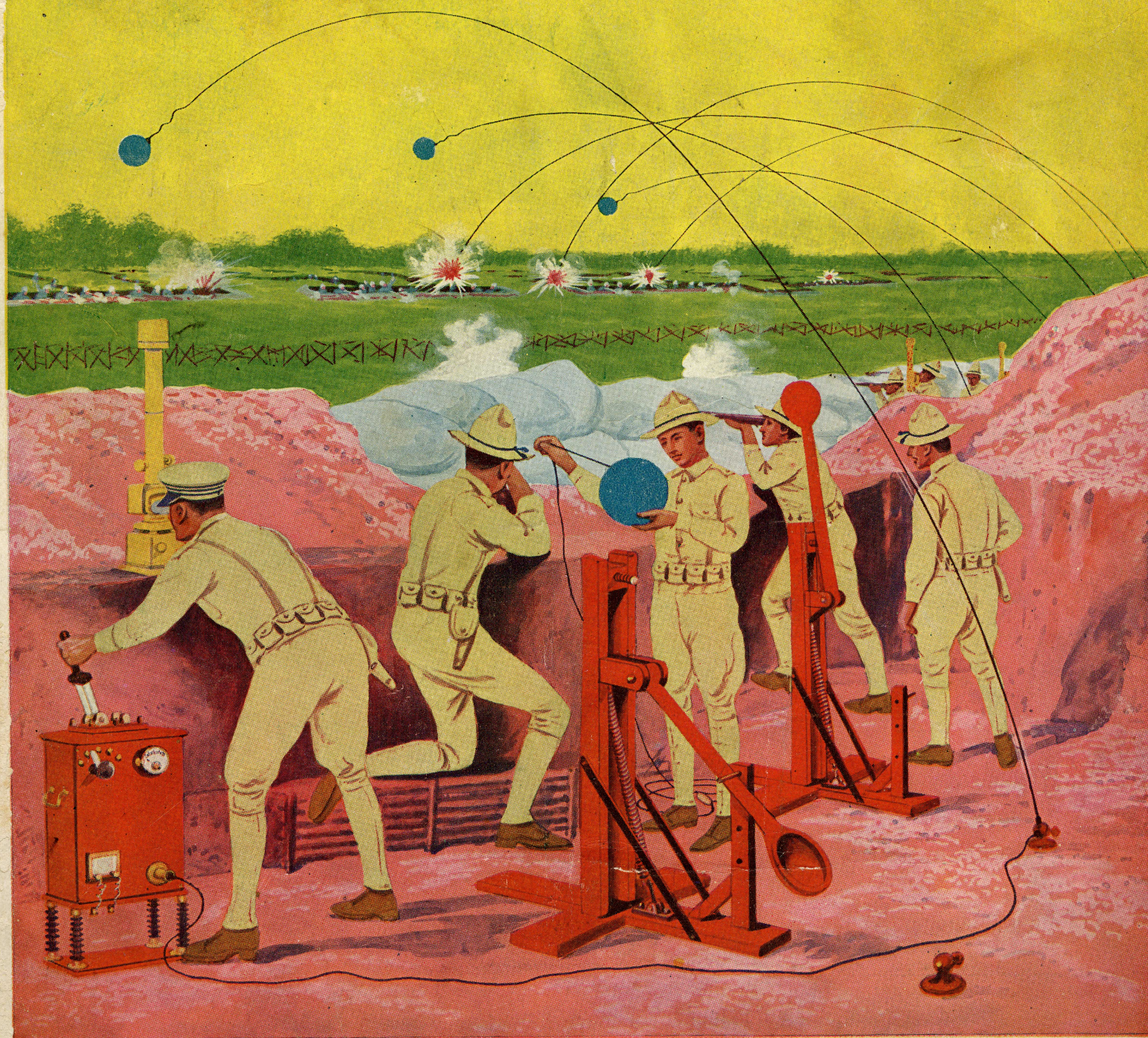
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# The Electrical Experimenter

POPULAR ELECTRICAL NEWS ILLUSTRATED

## FIRING ELECTRIC BOMBS

SEE PAGE 370



LARGEST CIRCULATION OF ANY ELECTRICAL PUBLICATION



# “BURNELL R. FORD— SCIENTIST. ELECTRICAL WIZARD”

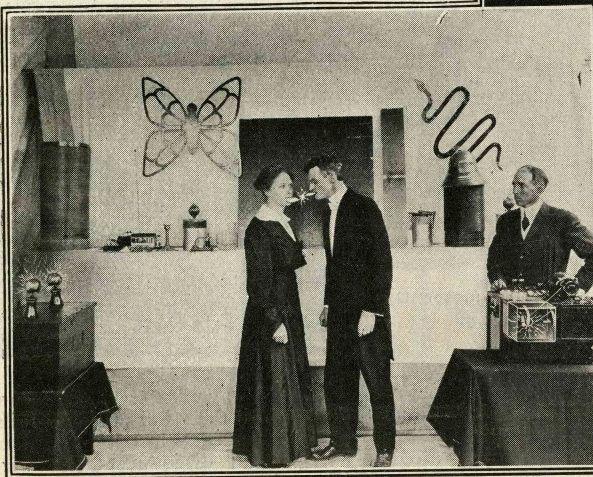
THUS do our friends, the theatrical managers, announce the electrical star of theaterdom—he of the flashing sparks and mastodonic Tesla coils. Mr. Ford is one of the most successful scientific lecturers in the country and is now on a Chautauqua tour.

“The late Elbert Hubbard described electricity as ‘the juice.’ Since Benjamin Franklin brought it from the sky with a kite, no better, or more scientific definition has been made. Yet the remarkable misunderstanding of the nature and properties

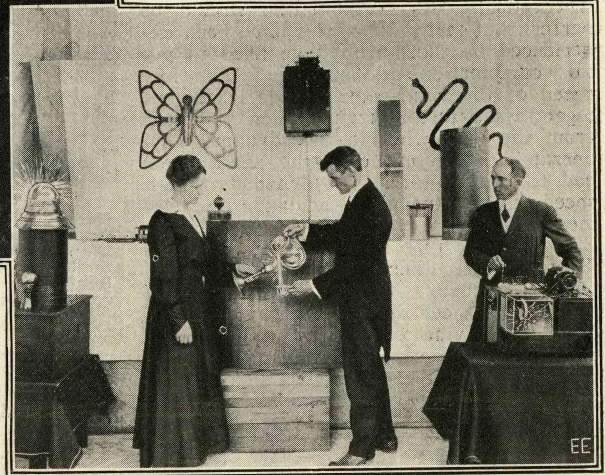


mouth (by using a spoon for example) and also to employ a sufficiently high-frequency Tesla current. Such a current, oscillating at say 100,000 cycles per second, will exert no muscular effects and simply passes over the skin of the lecturer.

The interesting effect shown in the center top photograph, is attained by cutting out a cardboard figure and covering it with tinfoil. This may be laid on a photographic plate and charged for a second with a high-frequency electrode. If desired a larger figure may be cut out of



The Electric “Boogieman” Is Made By Cutting Out a Cardboard Figure of the Desired Shape. When Coated With Tinfoil and Charged by One Terminal of An Oudin Coil This Is What You See.



Here Is Shown a Remarkable Demonstration of Electrical Welding Thru Two Human Bodies. Stiff Iron Wires Are Forever Welded, the Current Flowing From the Lecturer to An Assistant. Capable of the Simplest Explanation, This Experiment Is Nevertheless An Awe-Inspiring One.

The Photograph Shows the Lighting of An Ordinary Candle by Means of a Stream of Water. In Connection With This Experiment, the Lecturer Becomes a Human Dynamo, Lighting Arc Lights by Holding the Carbons In His Hands and Handling 3,000,000 Volts of Electricity.

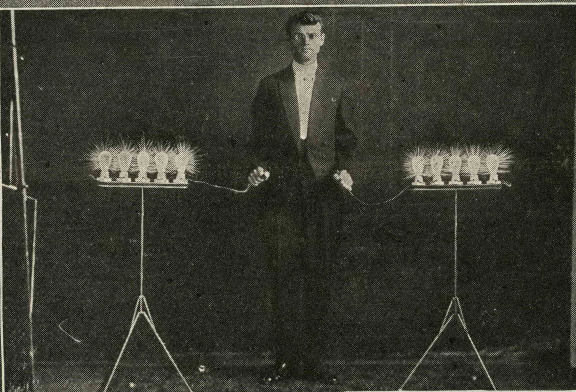
of electricity seems to be general and permanent. In the entire realm of popular education no one thing can be of more importance than to educate the people on what, to them, are the mysteries of electricity. To do this in a scientific, yet plain and thoroughly entertaining way, is no small accomplishment. The management, after much search and many discouragements, has found, in the person of Burnell R. Ford,

such a man,”—so reads our program.

One of the startling experiments performed by the lecturer is that of welding by current, which is made to pass thru the human body. Stiff iron wires are solidly welded as shown above, the heavy current flowing from the lecturer's mouth to that of his assistant. The essential thing to be watched in making this experiment is to have metal contact with the

thin wood and coated with tinfoil. When this is exhibited against a dead-black background and properly excited by connection to a powerful Oudin or Tesla high-frequency coil the effect on the audience is truly remarkable. The foil-covered figure should be charged, preferably from the live terminal of an Oudin coil.

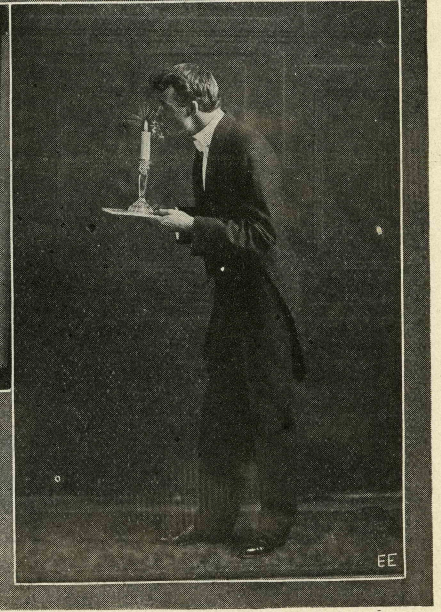
The right top view shows a mystifying (Continued on page 422)



At Left:—Lighting Indian Clubs by High-Frequency Currents Past Thru the Body.

Above:—The Lecturer Lights Up a Bank of Lamps to Full Brilliancy, the Current Flowing Thru His Body.

At Right:—Lighting a Candle by a Spark From the Tongue—A Mystifying Electrical Stunt.



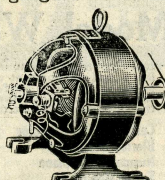


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### WOULD THE LAW LET YOU MARRY?

Some States have been wise enough to insist upon a medical examination of the two contracting parties to a marriage before a license is issued. Through the adoption of a law whereby the physically unfit were barred from marriage in every State in the Union, there would indeed be a relatively small percentage of the population that would measure up to the standard.

#### WOULD YOU BE ONE OF THOSE

doomed to go through life alone, without the joys that go hand in hand with a loving wife and healthy children? Our first duty is to posterity. We are not put here by an all-wise Providence merely to live out our lives, and then go out like a snuffed candle. We are entrusted with the sacred duty of perpetuating the race.

**LIKE BEGETS LIKE:** A man who is torn and racked by physical ailments and excesses of all kinds will some day see these traits in his children. On the other hand the strong, virile man, who jealously safeguards his body and his health, will some day revel in the sight of offspring that are a picture of joyous, bubbling health.

**YOU OWE IT MOST TO THAT GIRL**  
The sweetest, purest, dearest girl in the whole world whom you would call wife. Is your body clean? Do you realize the terrible consequences of the follies that are wrecking your body? Remember then that **STRONG-FORTISM** will restore to you the vitality of **MANHOOD**.

I have prepared a little book, "Intelligence in Physical and Health Culture," which should be read by everyone sufficiently interested in themselves to wish for the best in life. It points the way to better health, a cleaner, happier life, and a splendid physique. Three 2-cent stamps will pay for mailing the book. Send for it **NOW**.

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### RADIO TO HURL MINES AT U-BOATS.

After working for many months to perfect a new type of mine, electrically controlled by means of a powerful wireless apparatus located at a distance from the mine itself, a device which would enable one submarine to destroy another, it was learned recently that Dr. J. B. Whitehead, of the Johns Hopkins University, had brought his labors to a successful termination.

While Doctor Whitehead refuses to comment on this new invention, it is learned that by means of a powerful electric battery the new style of mine can be directed upon whatever course its operator may desire and can be exploded by simply pressing a button, the wireless waves being employed both in directing it and in its explosion.

The advantage that such a mine will have over the ordinary torpedo used by the submarine is the impossibility of failure to either miss the target or its non-explosion after the target is struck. By this method Doctor Whitehead has solved the problem of destroying submarines by submarines. In connection with this is a report that an instrument has been perfected to locate positions and distances of the submarine to be attacked.

### FREE ELECTRICITY FROM THE WIND.

(Continued from page 372)

The invention of this new slow speed design at once eliminates the gear troubles which all others who have attempted to utilize wind-power to drive dynamos have had to employ. It also makes it possible to effect, by magnetic leakage in the machine itself, its own regulation, and eliminating the use of auxiliary apparatus.

A boy sixteen years old can turn a crank fitted on to the wind-motor axle, when the machine is on the ground, and generate sufficient current to magnetize the dynamo fields and to light to full brilliancy three 16-candle-power lights for a period of twenty minutes at a time.

The axles, differential gearing and bearings are contained in a hollow steel housing, the same as a motor car rear axle, and this housing is pumped full of gear grease. Several machines are on record that have not been re-greased for two years at a time.

The drawing shows that the automatic cut-out and cut-in for the battery is a mechanical ball governor, but this cut-out has been substituted by an electro-magnetic cut-out and cut-in. The electro-magnetic cut-out simplified the plant and is located on the switch-board. With an average wind pressure of ten miles per hour for ten hours per day the larger plant has in practise charged a 25 volt battery with 90 A.H. per days, and has maintained a daily discharge for 8 months of 75 A.H. per day.

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### NEW DISTANCES IN RADIO TELEGRAPHY.

The Marconi station at Bandoeng, East Indies, has succeeded in establishing communication with America, Madrid and Berlin, according to *The Batavia Nieuwsblad*. Presumably this refers only to the reception of messages sent out from those parts of the world. Experiments are being made at Bandoeng with a view to the ultimate establishment of regular wireless communication with the mother country, Holland, and a 300 horsepower motor has enabled the operators to secure the promising result recorded.

### "BURNELL R. FORD—SCIENTIST—ELECTRICAL WIZARD."

(Continued from page 371)

ing trick of the electrical conjurer known as "The Human Dynamo." The lecturer's assistant lights a candle from a stream of water. The experiment is easily performed by taking the high-frequency current up thru the legs. A piece of wire here and there often helps out the lecturer and prevents him from getting unpleasant shocks. If the current is of sufficiently high frequency no trouble will be experienced in passing it right thru the body. But—don't try letting the current jump to or from the skin or you will rapidly lose your sang froid. Arrange matters so that the current jumps to or from a piece of metal in some way. And your conscience need not trouble you, either, for the audience is not being humbugged. The current actually does pass thru your body, just the same. It's simply a case of knowing how to handle the current.

The three lower illustrations are of Mr. Ford in a few more of his electrical rôles. At the left he lights fire balls by high-frequency current past thru his body. (The lecturer stands on a metal plate covered with a rug, the plate being connected to a high-frequency coil. A metal insole should be worn, making contact with a spiked nail in the heel of the shoe, which thus ensures a good large area contact between the charged plate and the lecturer's body.) The center photo shows the lecturer actually lighting up a bank of lamps thru his body. This experiment always attract undivided attention from any audience, large or small. It really is a remarkable demonstration, involving in many cases the transmission of possibly 500,000 volts and several amperes of current thru the body; and 1/10 of an ampere of low-frequency alternating current past thru the heart is said to invariably prove fatal. In the final photo at the right we see Mr. Ford bidding us good-night, and like all good souls, he lights his candle and prepares to retire. But he lights the candle by a spark shooting forth from his tongue. And just to make it interesting we are going to let our electrically inclined reader find out for himself how this trick is done.

### CHEMICAL ACTION OF STORAGE BATTERIES.

(Continued from page 401)

explained with the help of the osmotic theory by Le Blanc. The difficulty in applying this theory to the lead storage battery is to know what are the ions in the case of the lead peroxid plate. According to Le Blanc's theory, the lead peroxid, having a definite, tho slight solubility, dissolves in the dilute sulfuric acid and then reacts with water according to the following equation:—

